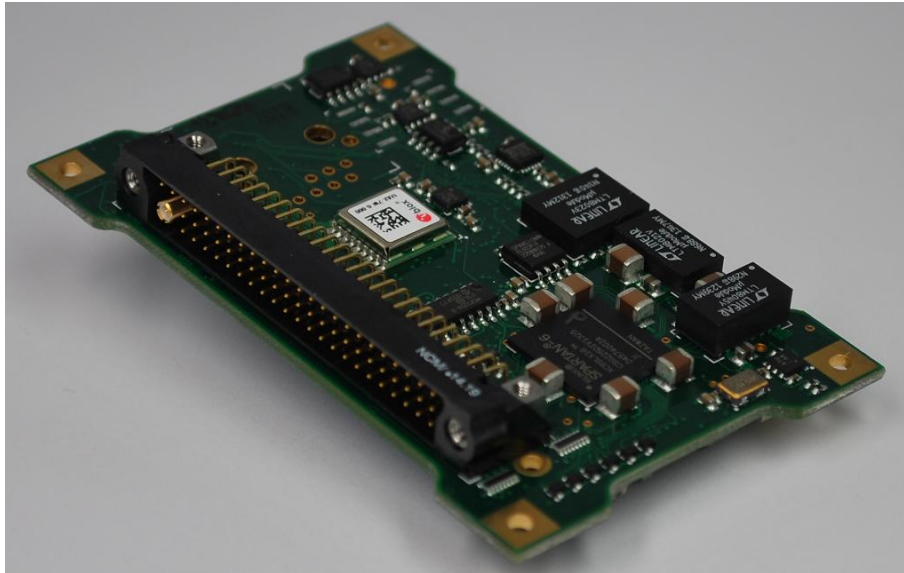


## wePilot4000

### Flight Control System for small rotary and fixed wing UAS

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#### 1 Overview

The wePilot4000 is a flight control system for small rotary and fixed wing unmanned aircraft systems. It consists of a single PCB which integrates an embedded computer system, a GPS receiver, accelerometers and rate gyros for all three axes, an absolute pressure sensor and a magnetometer.

The wePilot4000 combines integrated GPS/inertial navigation with robust controller design methodologies to provide attitude stabilization, motor

speed and airspeed control and accurate trajectory tracking even under high wind conditions.

Various interfaces (Ethernet, CAN, RS-232/485, digital I/O, analog inputs) allow to read external sensors and to control custom payload equipments. A datalink may be added to interface with the weGCS ground control station. Due to its small form factor and low power consumption the wePilot4000 is suitable for light weight aircraft.

## Specification

		wePilot4000	
<b>CPU</b>			
PXA255, 400MHz, 64kB RAM, 32kB ROM	1		
FPGA Spartan-6	1		
<b>Sensors</b>			
Onboard 3-axis magnetometer	1		
GPS/GLONASS/SBAS embedded GPS	1		
Absolute pressure sensor	1034		hPa
3 x gyroscopes	±250		°/sec
3 x accelerometers	±8		g
<b>Interfaces</b>			
Serial interfaces			
RS-232	3		
RS-232 or RS-485	1		
RS-232 or TTL	1		
CAN bus interface	1		
Ethernet	1		
PWM inputs/outputs			
Resolution	100		ns
S-Bus receiver interfaces	2		
Digital I/O	8		
Analog inputs (0 - 5 Volts)	8		
Frequency counters (RPM Sensor)	2		
<b>Environment</b>			
Operating temperature	-40 to +85		°C
<b>Electrical</b>			
Input voltage	7-15		VDC
Supply current (@12VDC)	200		mA
<b>Physical</b>			
Size (L x W x H)	78 x 48 x 18		mm
Weight	60		g

## Functional Block Diagram

